

KIC 009716038

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
009716038-01	OBS	No	363.936195	471.778758	64879.0	16.077	246.5	309.3	0.82	5305	31.81	0.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009716038-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

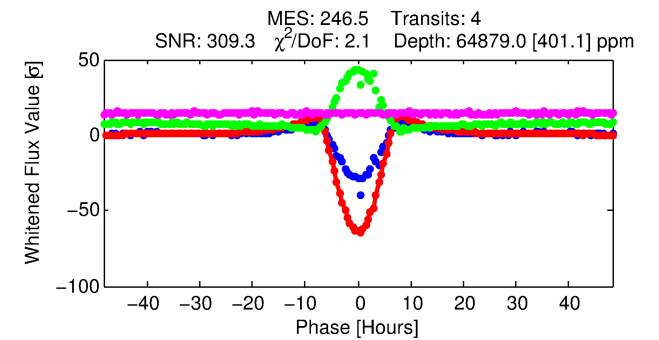
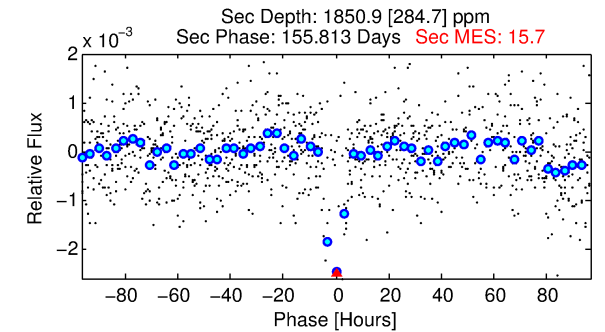
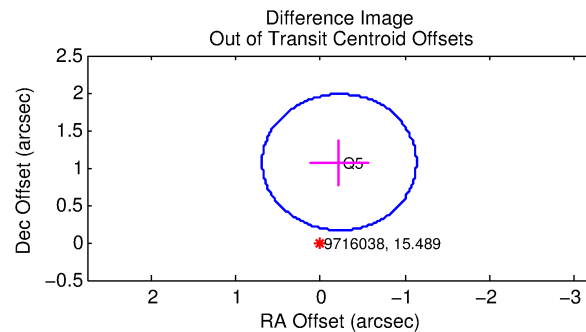
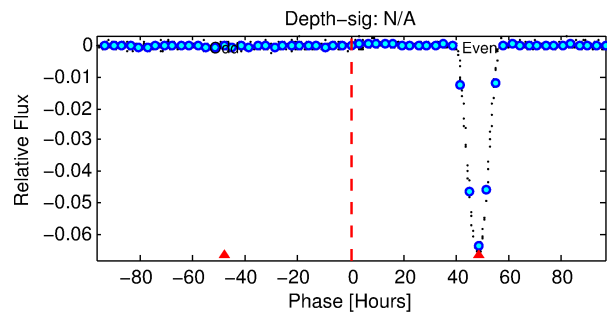
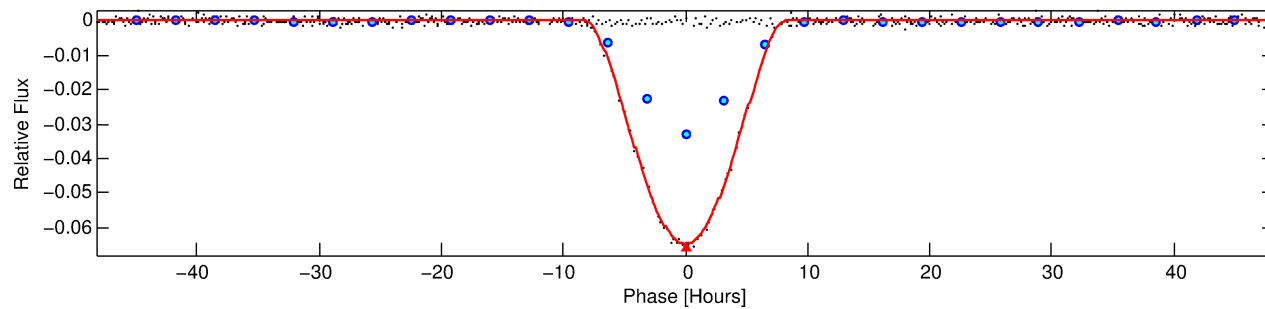
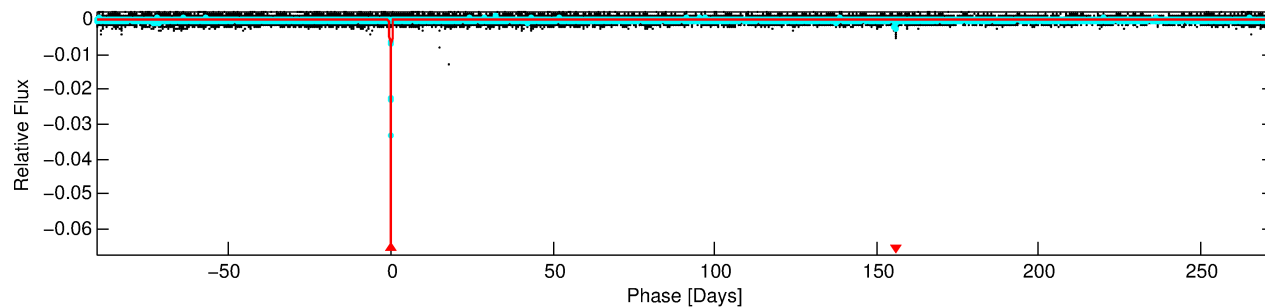
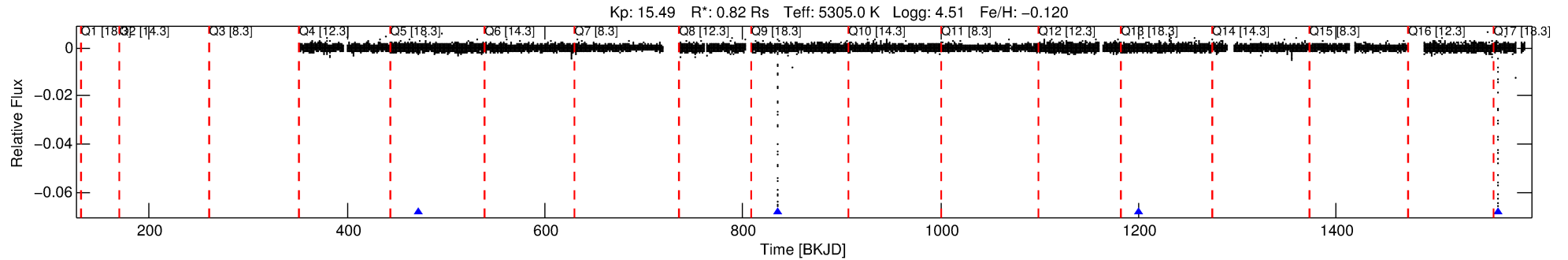
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009716038-01

No Significant Match Found

DV One-Page Summary

KIC: 9716038 Candidate: 1 of 1 Period: 363.936 d



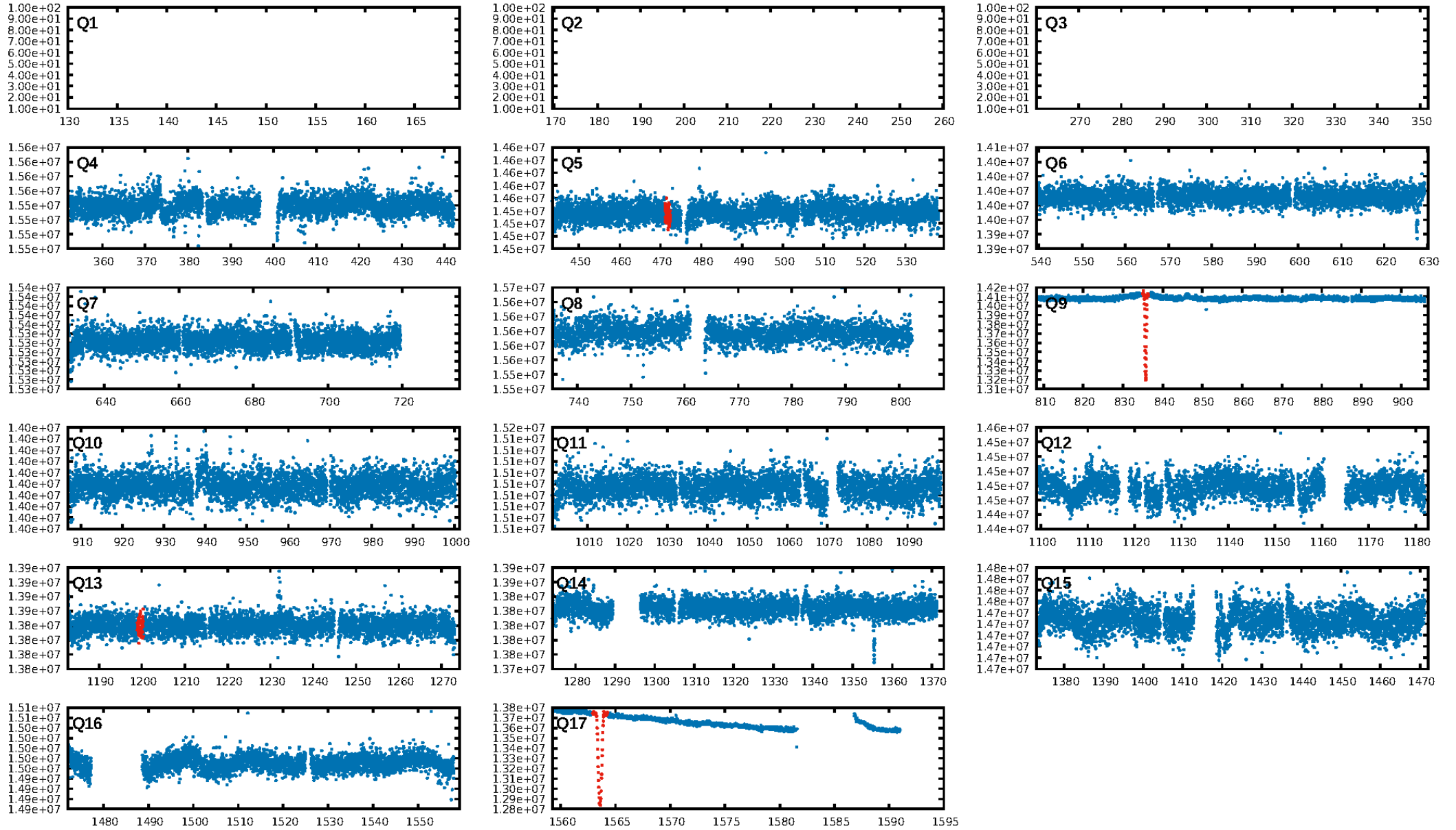
DV Fit Results:

Period = 363.93620 [0.00088] d
Epoch = 471.7788 [0.0016] BKJD
Rp/R* = 0.3542 [0.1204]
a/R* = 169.82 [1.52]
b = 0.93 [0.18]
Seff = 0.56 [0.13]
Teq = 220 [13] K
Rp = 31.81 [11.96] Re
a = 0.9282 [0.1218] AU
Ag = 866.87 [625.40] [1.38σ]
Teffp = 1849 [329] K [4.95σ]

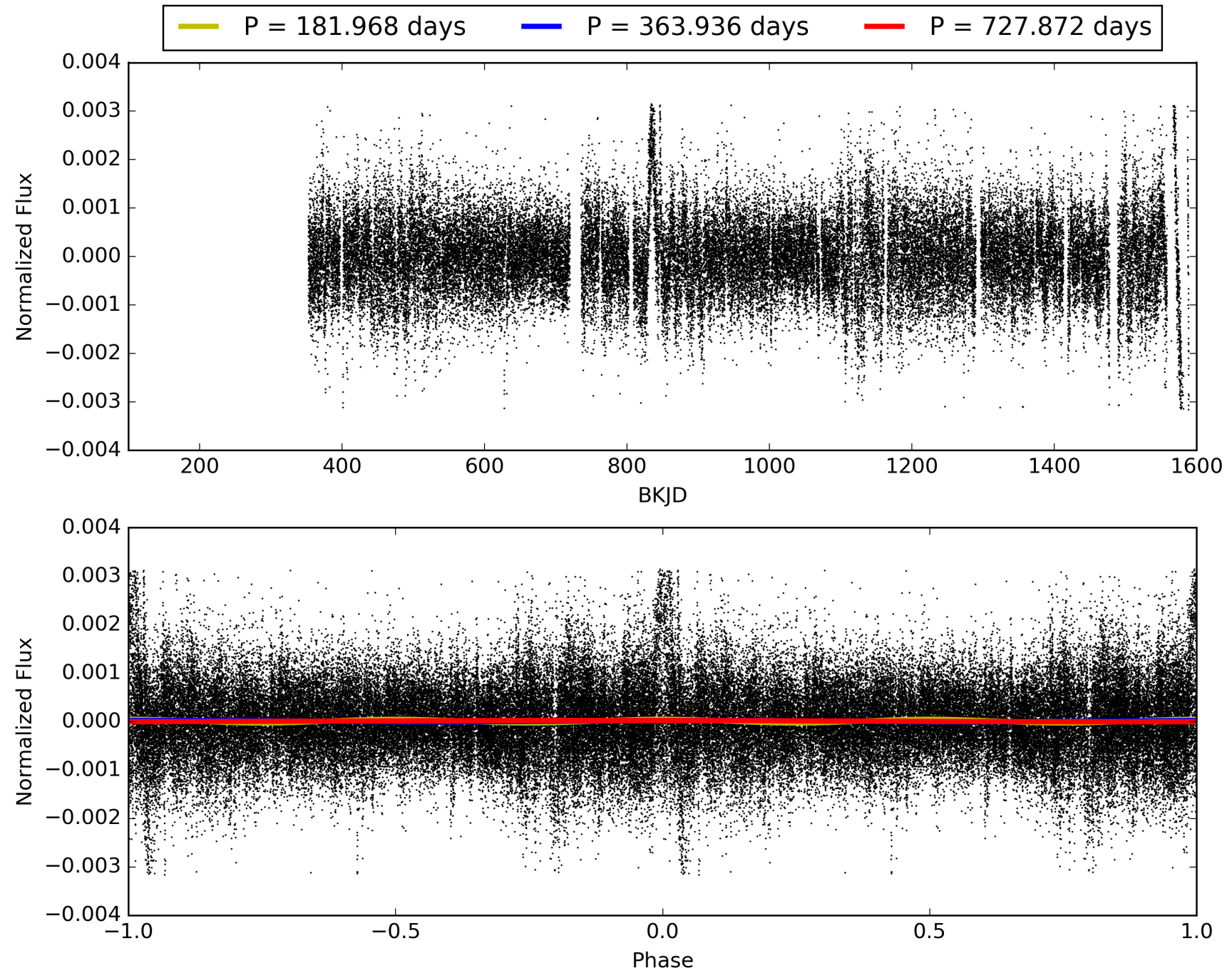
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.065
Centroid-sig: 0.0%
Centroid-so: 2.211 arcsec [383.64σ]
OotOffset-rm: 1.096 arcsec [3.62σ]
KicOffset-rm: 0.700 arcsec [2.30σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 009716038-01, PDC Light Curves

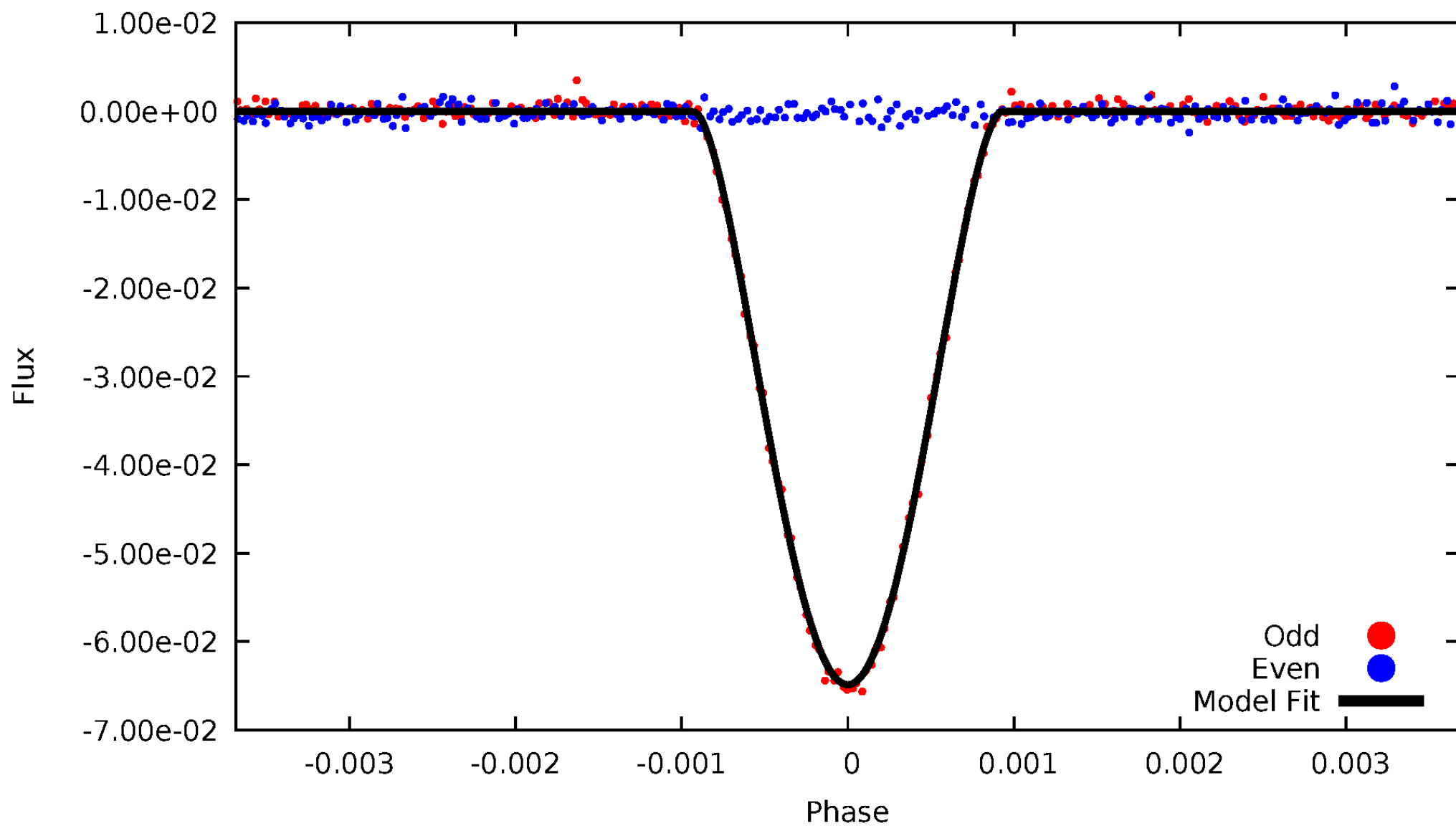


TCE 009716038-01



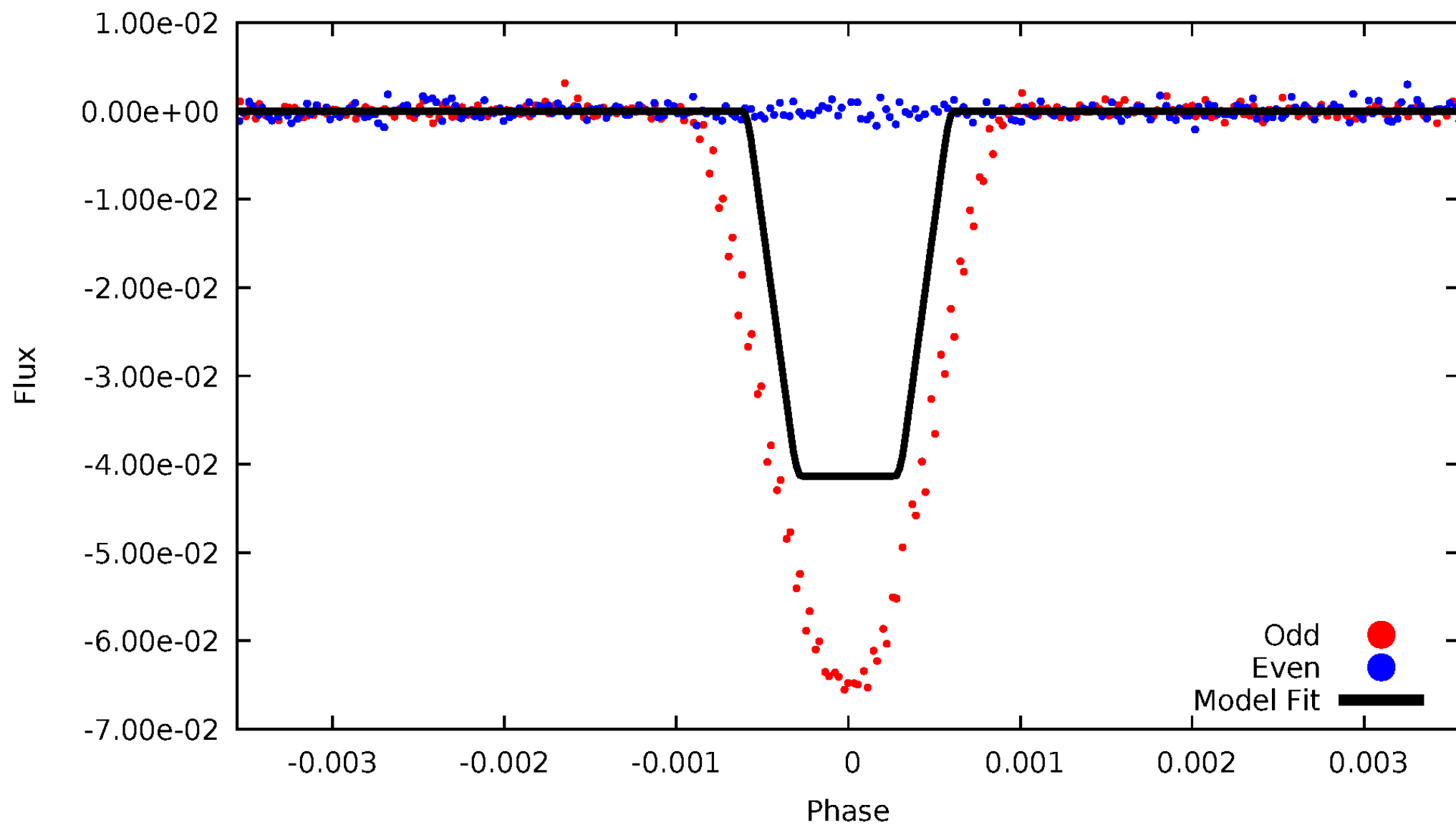
DV Odd/Even

TCE 009716038-01



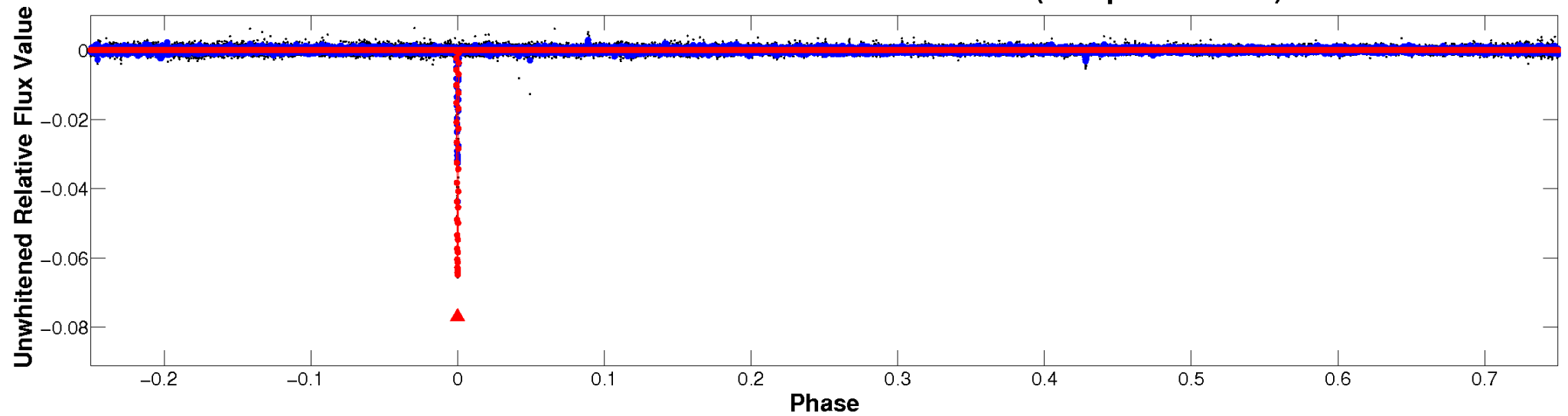
ALT Odd/Even

TCE 009716038-01

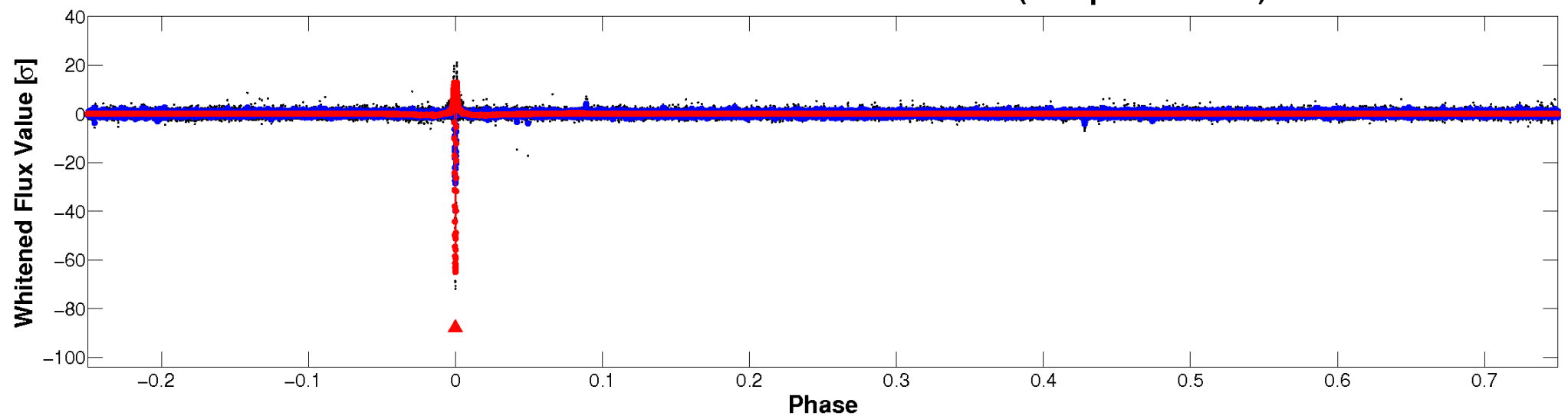


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

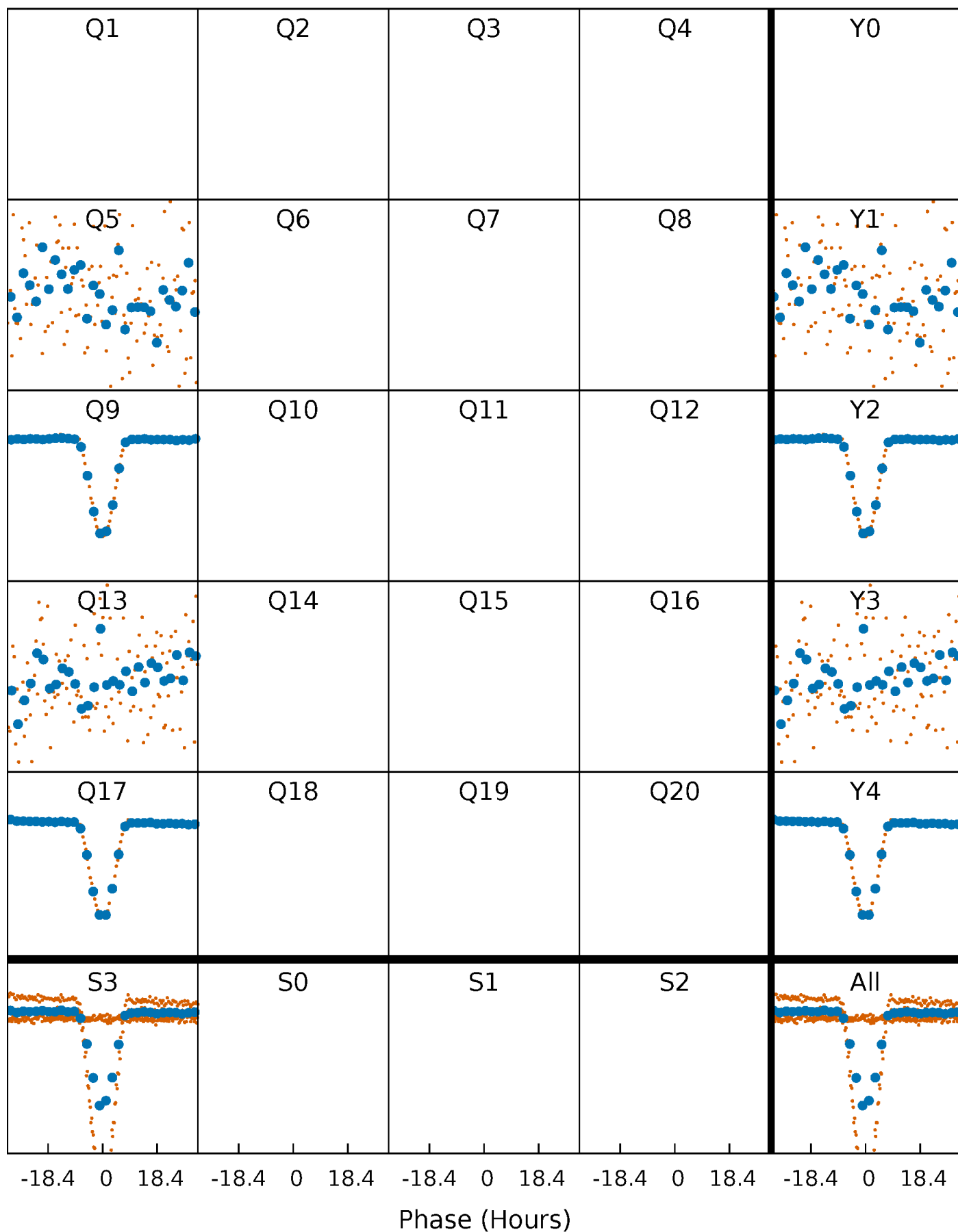


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



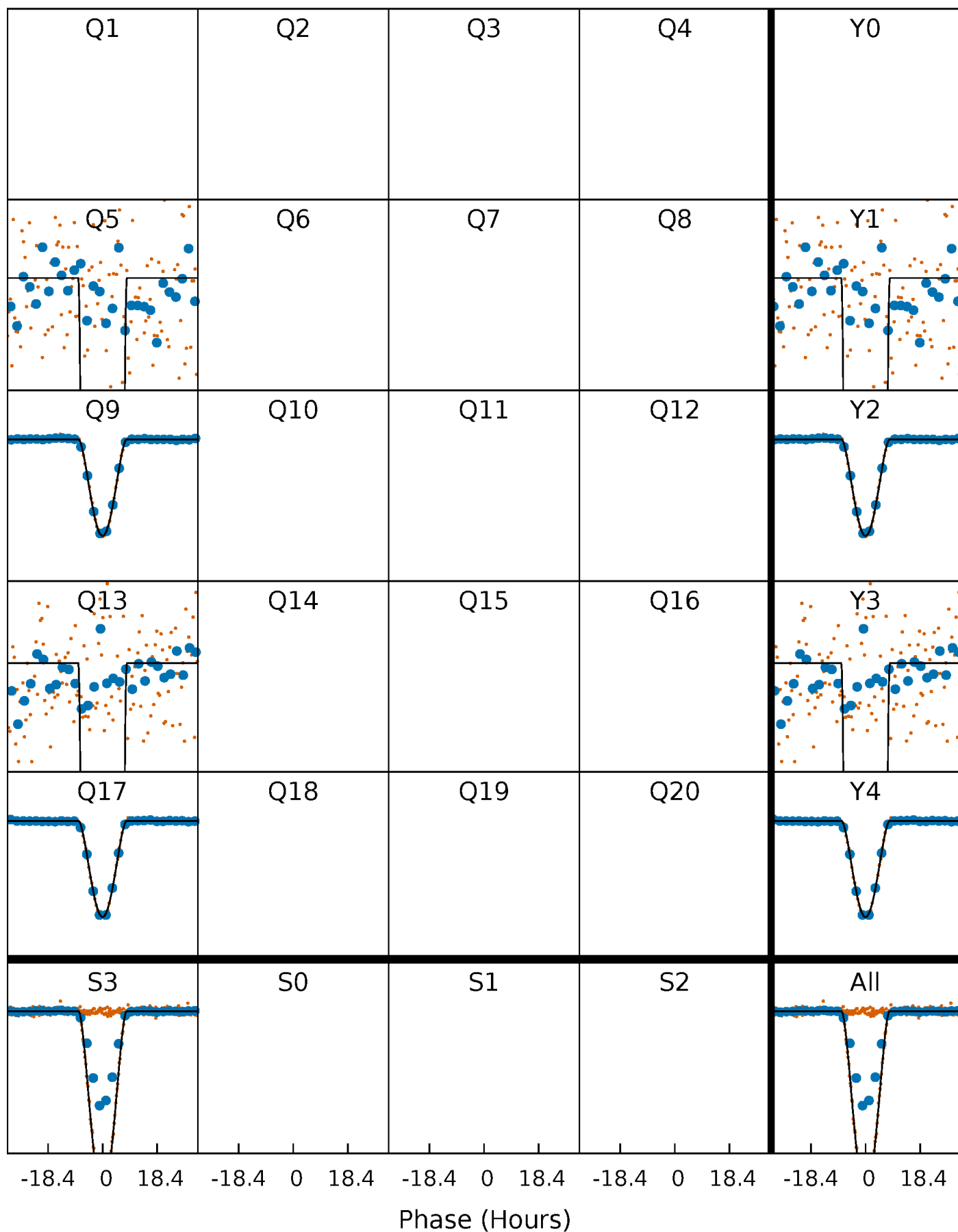
PDC Quarter-Phased Transit Curves

TCE 009716038-01 P=363.936195 Days $T_0=471.778758$ (BKJD)



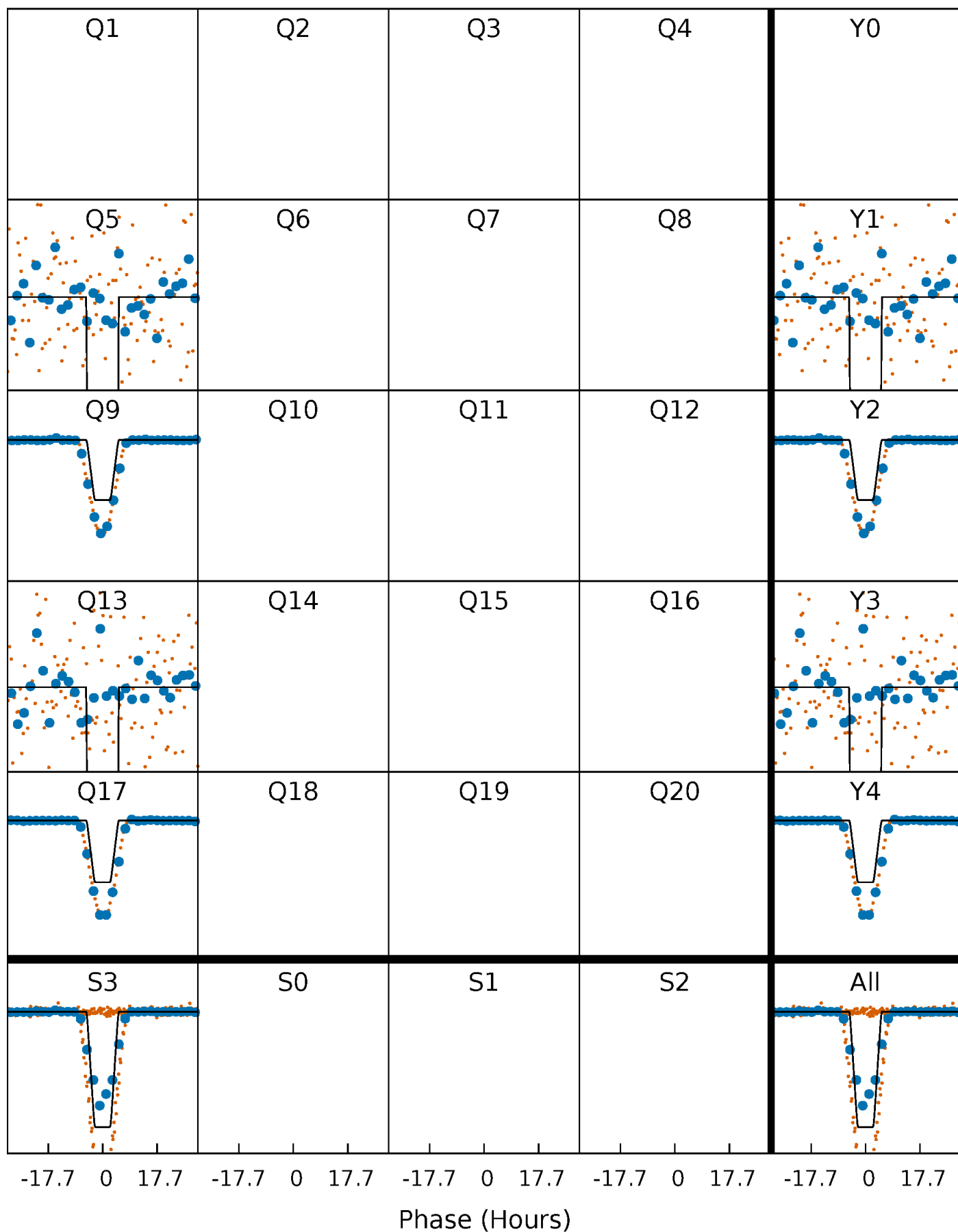
DV Quarter-Phased Transit Curves

TCE 009716038-01 $P=363.936195$ Days $T_0=471.778758$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

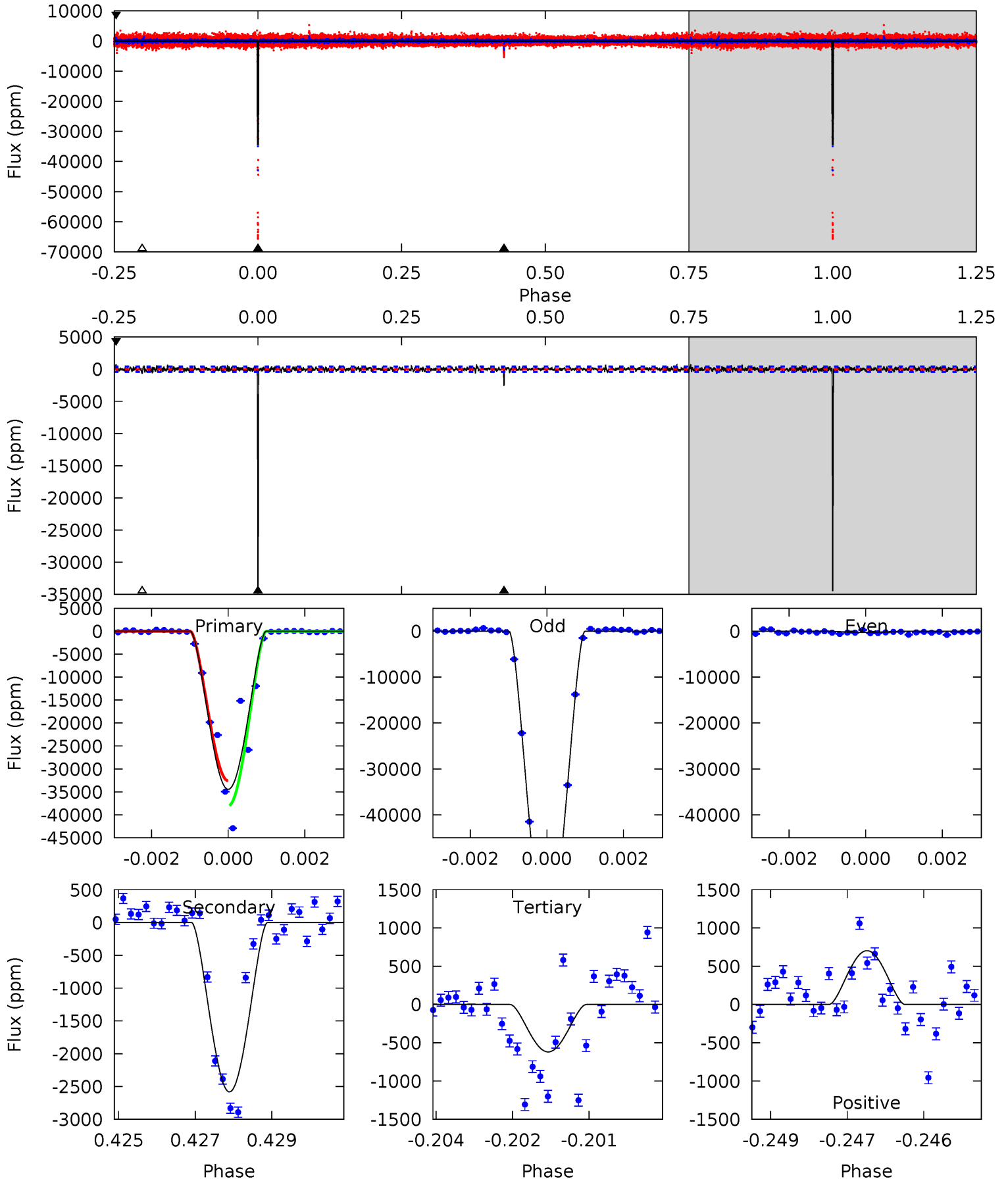
TCE 009716038-01 P=363.928515 Days $T_0=471.793064$ (BKJD)



DV Model-Shift Uniqueness Test

009716038-01, P = 363.936195 Days, E = 107.842563 Days

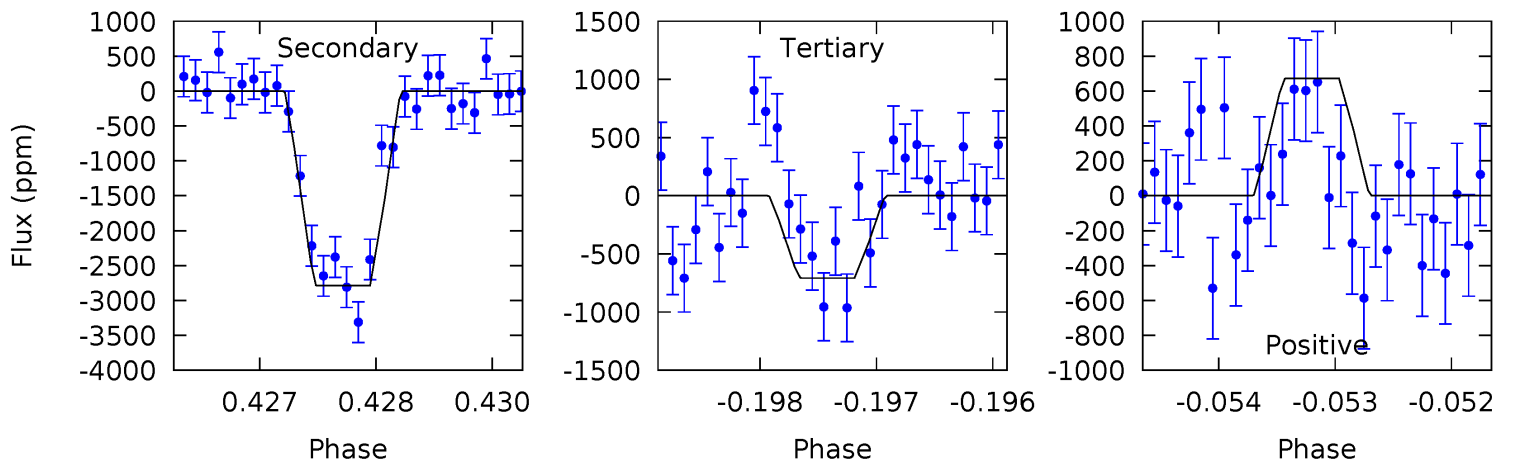
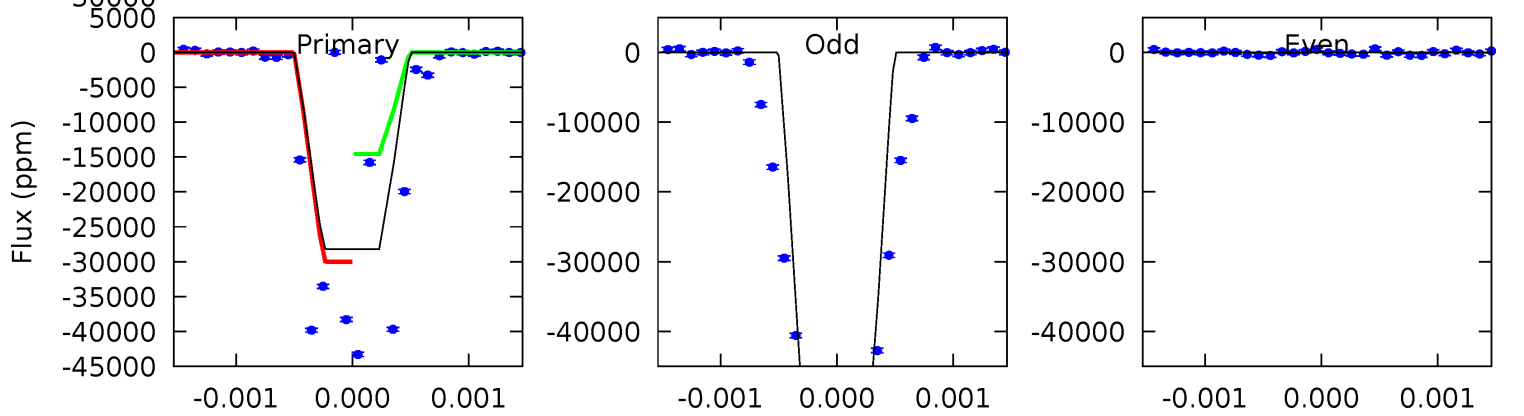
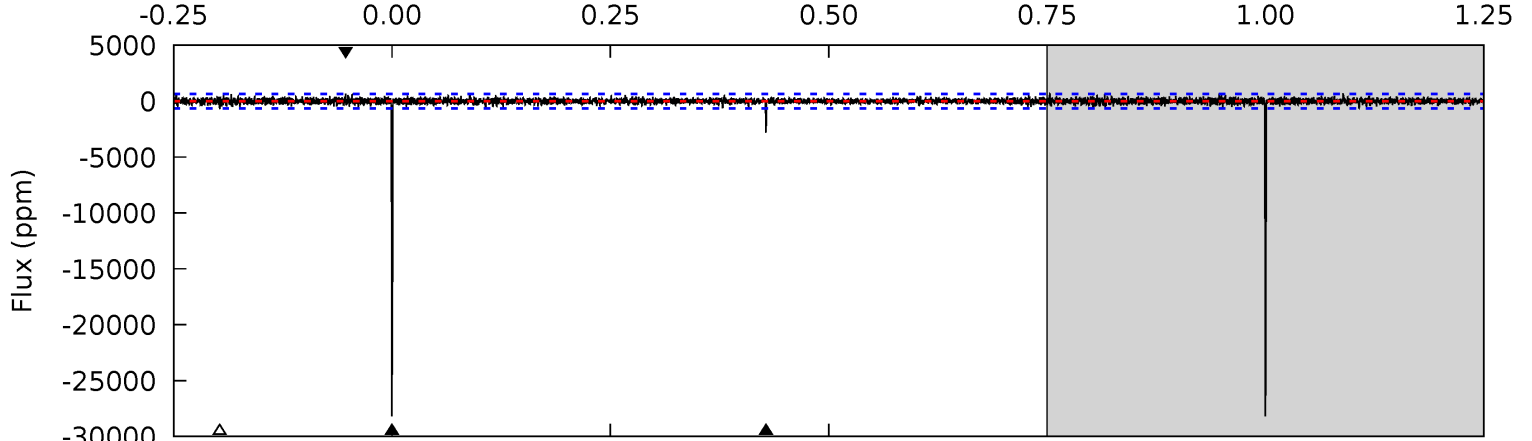
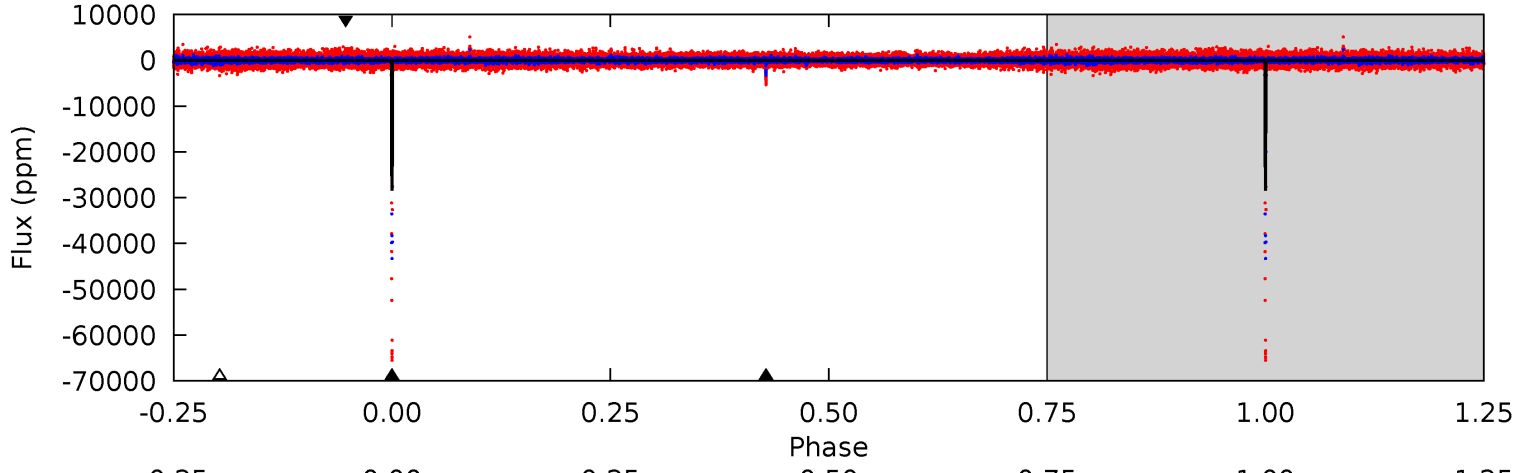
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
448.8	33.6	8.07	9.16	5.34	3.11	2.01	440.7	439.6	25.6	24.5	532.9	1.01	0.02	33.9



Alt Model-Shift Uniqueness Test

009716038-01, P = 363.928515 Days, E = 107.864549 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
237.6	23.5	5.97	5.67	5.42	3.24	1.19	231.7	232.0	17.5	17.8	411.2	1.00	0.02	64.8



Stellar Parameters For KIC 009716038

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5305^{+185}_{-185}	$4.513^{+0.072}_{-0.099}$	$-0.120^{+0.300}_{-0.300}$	$0.823^{+0.132}_{-0.099}$	$0.806^{+0.104}_{-0.070}$	$2.038^{+0.650}_{-0.645}$
	+3%/-3%	+2%/-2%	+250%/-250%	+16%/-12%	+13%/-9%	+32%/-32%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009716038-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2583 ± 77	$32.59^{+11.34}_{-10.24}$	310^{+15}_{-15}	2746^{+321}_{-195}	1167^{+1281}_{-526}
Alt.	-2790 ± 119	$19.46^{+10.72}_{-10.24}$	310^{+16}_{-15}	3237^{+855}_{-404}	3587^{+11949}_{-2148}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

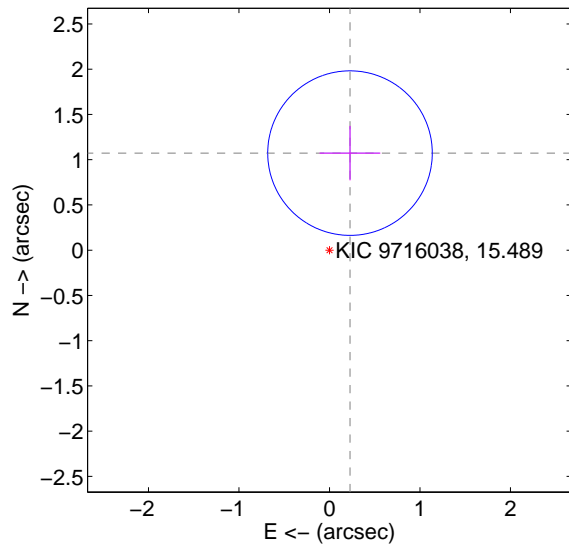
Supplemental centroid analysis for 009716038-01. Kepler magnitude: 15.49. Transit SNR 309.27

There are 1 quarters with good PRF difference image offsets

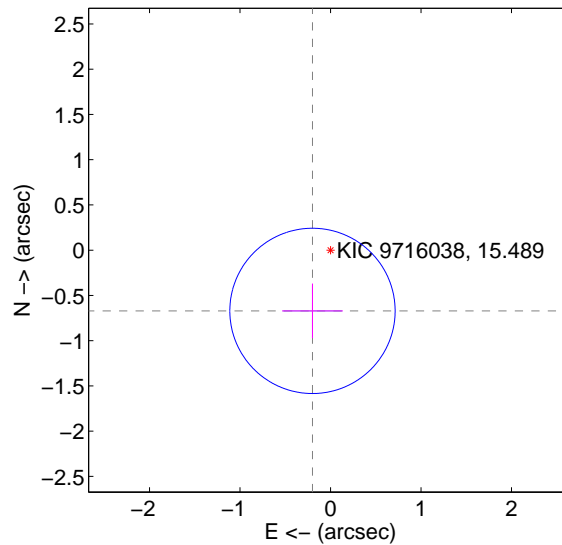
The direct PRF centroid is offset from the target star catalog position by about 1.80 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.096 ± 0.303	3.62	-0.227 ± 0.336	1.073 ± 0.302
PRF-fit source offset from KIC position	0.700 ± 0.304	2.30	0.199 ± 0.336	-0.671 ± 0.302
photometric centroid source offset	2.21 ± 0.01	383.64	0.48 ± 0.01	-2.16 ± 0.01

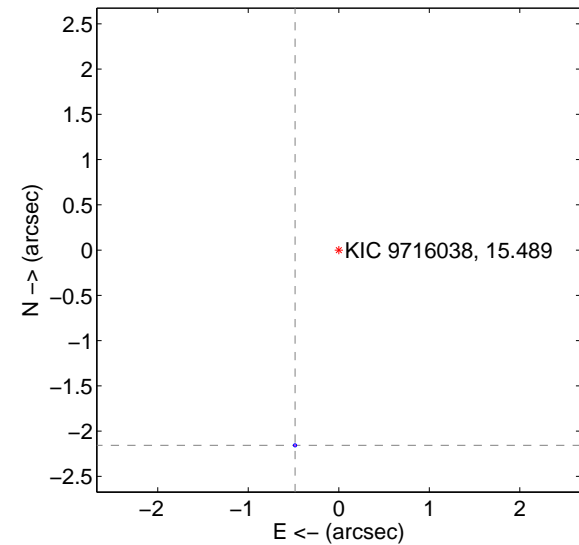
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

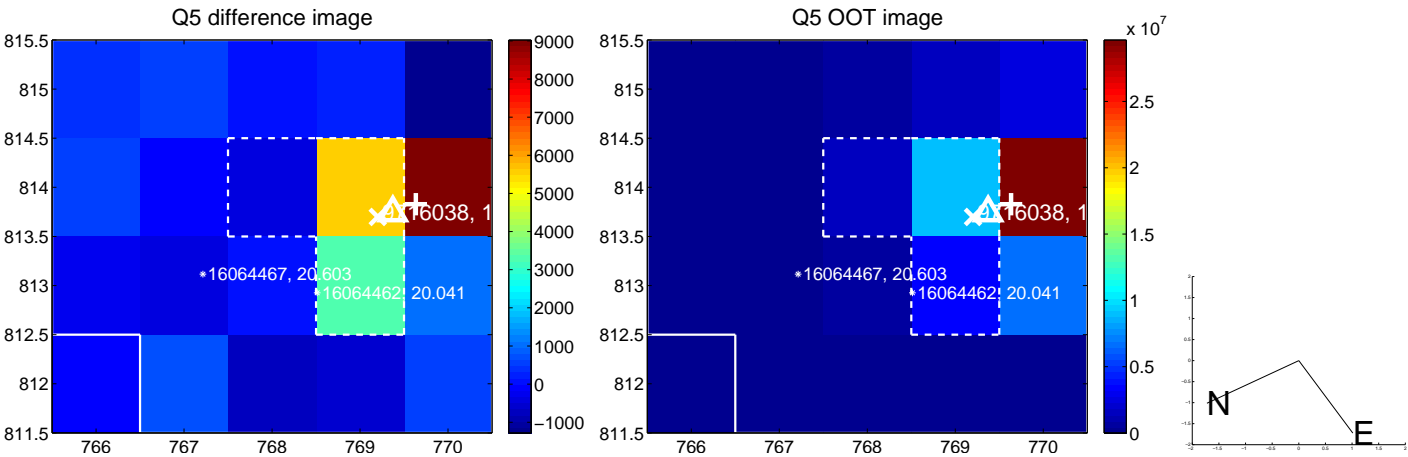


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

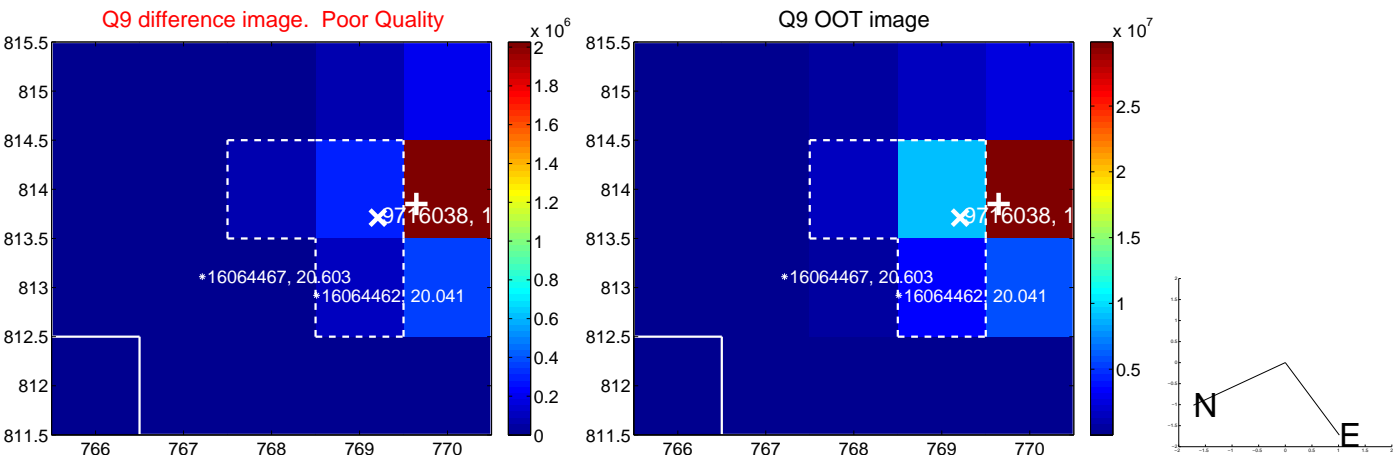
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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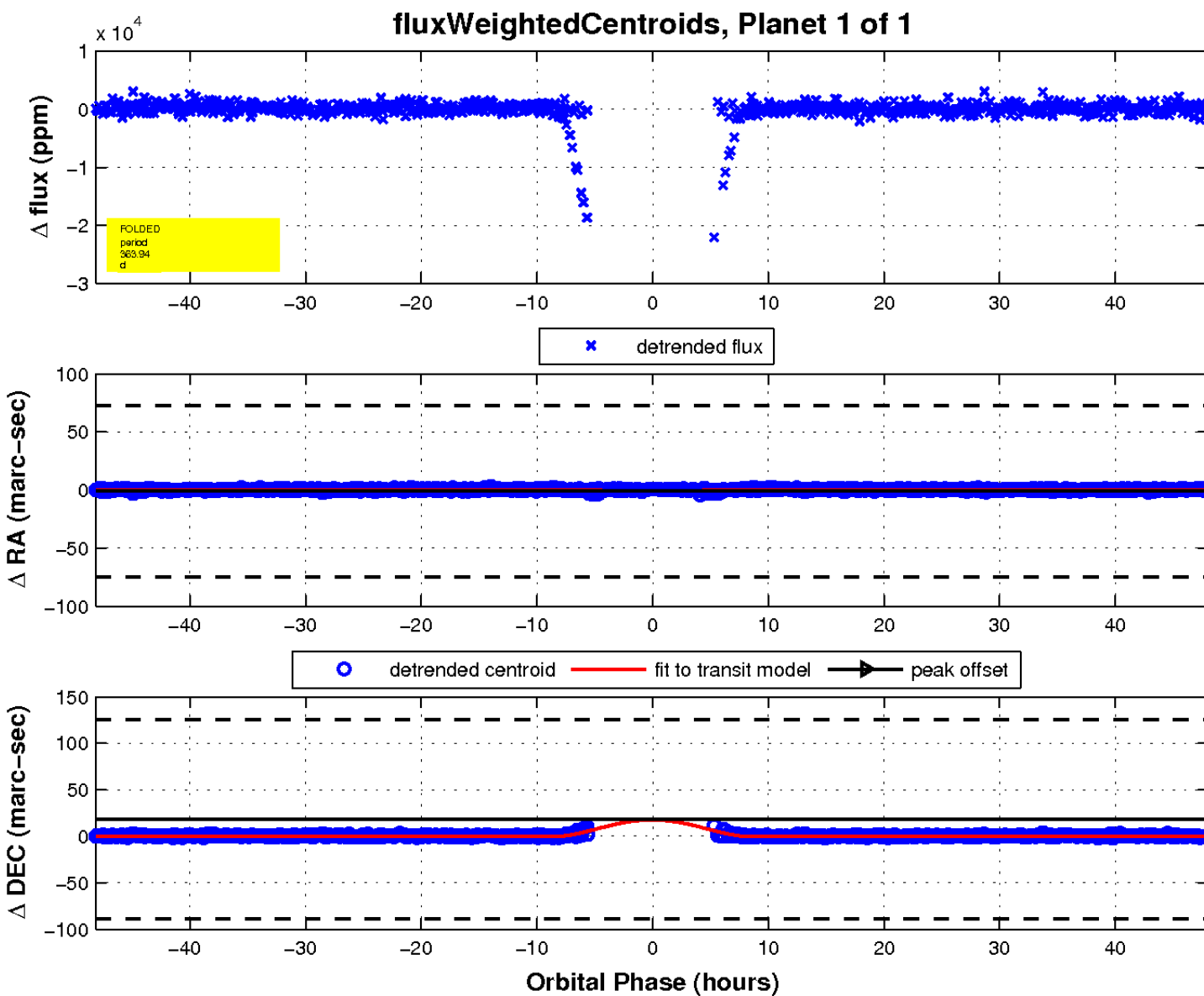
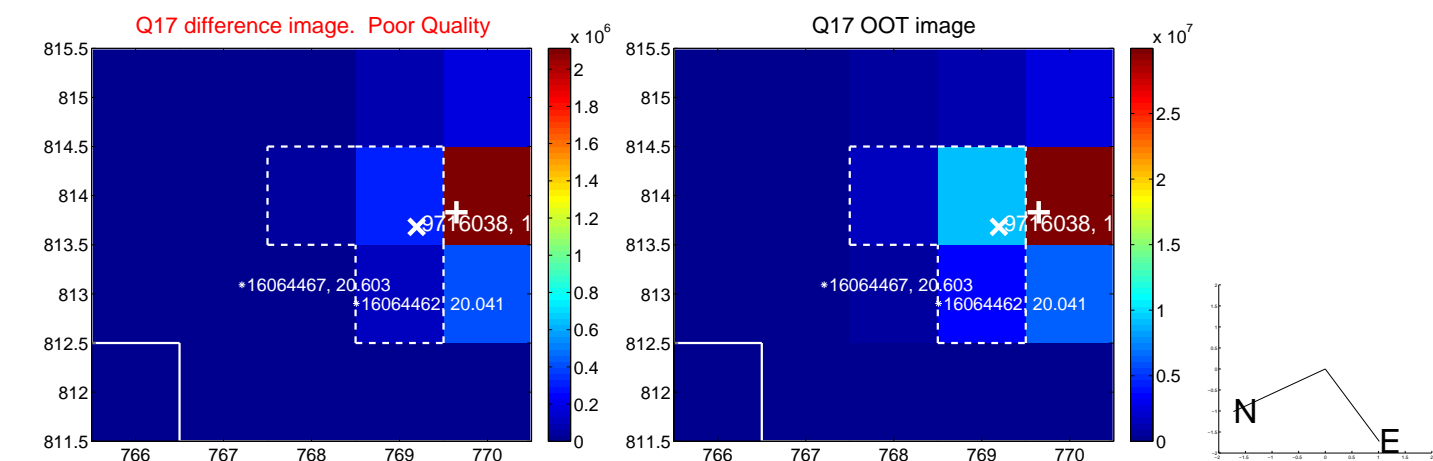
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UKIRT Image

Declination

